

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division  
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BFI Waste Systems of North America, Inc.  
Missoula Landfill  
SE¼ of the NE¼ of Section 8 and 9, Township 13 North, Range 19 West, Missoula County  
P.O. Box 8449, Old Coal Mine Road  
Missoula, MT 59802

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required		X	
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
<b>Applicable Air Quality Programs</b>			
ARM Subchapter 7 Preconstruction Permitting	X		Montana Air Quality permit 2831-02, Missoula County permit MC2831-00
New Source Performance Standards (NSPS)	X		40 CFR 60, Subpart WWW
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)		X	
Major New Source Review (NSR)		X	
Prevention of Significant Deterioration (PSD)		X	
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
State Implementation Plan (SIP)	X		General SIP

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## **SECTION I. GENERAL INFORMATION**

### **A. Purpose**

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original operating permit application submitted by BFI Waste Systems of North America, Inc. (BFI) and received by the Department on June 10, 1997, and the Title V operating permit renewal application received by the Department on February 6, 2004.

### **B. Facility Location**

BFI owns and operates the Missoula Landfill. This facility is located in the SE¼ of the NE¼ of Sections 8 and 9, Township 13 North, Range 19 West, in Missoula County, Montana. Missoula County is designated as an Unclassifiable/Attainment area for National Ambient Air Quality Standards (NAAQS) for all criteria pollutants except for carbon monoxide (CO) and particulate matter with an aerodynamic diameter of 10 microns or less (PM<sub>10</sub>). The landfill is on the north-northwestern edge of Missoula.

### **C. Facility Background Information**

On December 25, 1994, BFI was issued Permit #2831-00 to operate a John Zink Company enclosed landfill flare system that included all of the equipment downstream of the gas extraction system at BFI's landfill. BFI uses the landfill flare system to combust landfill gas collected by a gas extraction system. The collected gas is composed mainly of methane (approximately 50%), carbon dioxide (approximately 40%), and other trace gases. The gas extraction system was installed to comply with the Resource Conservation and Recovery (RCRA) Subtitle D regulations, prevent the mitigation of gas into adjacent soils, and remove excess gas from within the waste mass to prevent vegetative stress, control odors, and maintain ground water quality.

On March 20, 1996, BFI requested that Permit #2831-00 be modified to extend the deadline on the initial testing requirements. BFI had been having some minor difficulties keeping the flare operating continuously. This permit modification, Permit #2831-01, provided BFI with additional time to perform the initial testing required to monitor compliance with permit conditions. BFI was required to monitor compliance with the emission limits October 1, 1996. This modification did not result in an increase in any emissions from the facility.

On August 21, 1997, BFI was issued Permit #2831-02 as a modification. The modification changed the facility's name from Browning-Ferris Industries of Montana, Inc. to BFI Waste Systems of North America, Inc. Also, BFI is subject to the requirements of 40 Code of Federal Regulations (CFR) 60, Subpart WWW that were promulgated by EPA on March 12, 1996; therefore, the Department added Section II.A.5 to the Preconstruction Permit # 2831-02. In addition, the rule citations were updated to reflect the new rule citations.

Title V Operating Permit #OP2831-00 was issued final and effective on July 30, 1999.

On May 5, 2003, BFI was issued Permit MC2831-00 by the Missoula-County Air Pollution Program (APCP). This permit modification made the APCP the permitting authority for BFI. According to APCP MC2831-00 replaced Montana Air Quality Permit #2831-02. The Department has not revoked Permit #2831-02.

**D. Current Permit Action**

The current permit action is a renewal of BFI's Title V Operating Permit #OP2831-00 for the Missoula Landfill. BFI's Operating Permit #OP2831-00 was applicable for 5 years and expired on July 30, 2004. BFI applied for a renewal of their Title V Operating Permit on February 6, 2004. This action also incorporates changes made under Permit #2831-02. Operating Permit #OP2831-01 replaces Operating Permit #OP2831-00.

**E. Taking and Damaging Analysis**

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on February 27, 2004.

**F. Compliance Designation**

The Department and Missoula County conducted a Level II inspection at the BFI facility on September 11, 2003. The inspection findings and all the material reviewed in the Department and Missoula County files indicate that the facility is in compliance with the limits and conditions of the Montana Air Quality Permit #2831-02 and the Title V Operating Permit OP2831-00.

BFI was required to conduct initial tests on the flare. The tests were conducted in June 2001. All the test results demonstrate compliance with the permitted emission limitations.

## **SECTION II. SUMMARY OF EMISSION UNITS**

### **A. Facility Process Description**

BFI operates a landfill flare system to combust landfill gas collected by a gas extraction system.

#### **Gas Extraction System**

The gas extraction system will originally consist of approximately 25 gas extraction wells drilled in the existing used landfill area. As the landfill expands in size, more gas extraction wells will be connected to the extraction system. Each gas extraction well consists of 36 inch diameter wellbore, a six inch diameter perforated high density polyethylene (HDPE) well pipe, a gravel pack, bentonite well seals to isolate the well and prevent air from being drawn into the landfill as vacuum is applied, and a control valve to control the vacuum applied to each well. Each of the extraction wells are connected to an underground piping system that transports the landfill gas and associated liquid condensate into a condensate sump. Periodically, the condensate sumps will be pumped into a municipal sewer system. (Note: Previous experience has indicated that the condensate can be treated effectively without causing any adverse impacts on the local wastewater system.) Finally, the landfill gas will flow to the blower building.

#### **Blower Building**

Landfill gas entering the blower building first flows through a knock-out pot to remove any remaining condensate and then through one of two centrifugal blowers. A fail-closed valve will be located between the knock-out pot and the blowers and will automatically shut if the flare ceases to operate, to isolate the landfill gas from the blowers. The building will be equipped with ventilators to prevent an explosive environment from developing, posted with signs, and secured from the public.

#### **Flare System**

Start-up of the enclosed flare will begin with a small blower located at the base of the flare purging the flare chamber of fugitive hydrocarbon vapors. After the purge cycle is complete, the pilot management system will ignite a propane stream with a spark from an electronic transformer. Once an ultraviolet (UV) flame scanner verifies the presence of the flame, the landfill gas inlet valve will be opened and one of the two blowers will be started. This will cause landfill gas to enter the flare chamber through a set of burner tips. A flow meter and recorder will be used to monitor the flowrate (maximum of 2000 standard cubic feet per minute (scfm)) of the landfill gas into the flare chamber. BFI has the ability with this data to calculate the daily volume to the flare. To prevent a flame from traveling upstream into the blower system, a flame arrester will be located between the blower building and the flare chamber.

A UV flame scanner will be used to detect the presence of a flame in the flare chamber. When a flame is not detected the flare system will automatically shut down and begin an automated restart sequence.

The flare stack temperature will be continuously monitored by a thermocouple mounted near the flare exit and recorded on a circular chart recorder. When the thermocouple detects that combustion is occurring outside of a specified temperature range (1400-2000°F), the temperature controller will transmit signals to an air damper located at the base of the flare. The air damper's actuator will either open the damper to allow more quench air into the flare and decrease the chamber temperature or close the damper to raise the chamber temperature.

The Standard Industrial Classification (SIC) for this facility is "Municipal Solid Waste Landfill" which has a SIC Code of "4953."

## **B. Emission Units and Pollution Control Device Identification**

BFI operates a municipal solid waste landfill in Missoula, Montana, and emissions are controlled with an enclosed flare. The emitting units are the landfill itself, which is controlled with the flare and is subject to 40 CFR 60, Subpart WWW. The flare is also an emitting unit that must maintain compliance with the opacity, nitrogen oxides (NO<sub>x</sub>), CO, volatile organic compounds (VOC), and hydrochloric acid (HCl) limitations.

## **C. Categorically Insignificant Sources/Activities**

The Administrative Rules of Montana (ARM) 17.8.1201(22)(a) defines an insignificant emissions unit as one that emits less than 5 tons per year of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any hazardous air pollutant, and is not regulated by an applicable requirement other than a generally applicable requirement. The following are the insignificant emitting unit located at the facility.

<b>Unit Number</b>	<b>Description</b>
IEU1	Commercial Fuel Combustion (engine) <0.50 million British thermal units per hour (MMBtu/hr)
IEU2	VOC Diesel Tanks <10,000 gallon capacity
IEU3	Liquefied Petroleum Gas (LPG) Propane Tanks <40,000 gallon capacity
IEU4	Natural gas combustion heaters < 5 MMBtu/hr
IEU5	Space heaters < 0.50 MMBtu/hr

### **SECTION III. PERMIT CONDITIONS**

#### **A. Emission Limits and Standards**

The following emitting units are required to be installed and operated with the equipment listed below.

The landfill is subject to 40 CFR 60, Subpart WWW requirements. The flare is operated as the control device for the landfill. The landfill gas sent to the flare is limited to  $2.88 \times 10^6$  standard cubic feet per day. The flare is limited to a 10% opacity and 0.10 grains per dry standard cubic foot (gr/dscf) corrected to 12% carbon dioxide (CO<sub>2</sub>), emissions are limited as follows: NO<sub>x</sub> emissions-5.46 pounds per hour (lb/hr), CO emissions-21.84 lb/hr, VOC emissions-0.69 lb/hr, and HCl emissions-1.51 lb/hr. The source demonstrated compliance with these limitations on July 25, 1996, during the initial testing and further testing performed in June 2001.

#### **B. Monitoring Requirements**

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirement for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance does not require the permit to impose the same level of rigor for all emission units. Furthermore, it does not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for an insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (i.e., no monitoring) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units. However, the Department may request additional testing to determine compliance with the emission limits and standards. If it is determined through testing, using test methods identified in the Montana Source Testing Protocol and Procedures Manual, that any emissions unit is out of compliance with any applicable requirement, BFI will not be shielded from an enforcement action even if the required monitoring methods listed in the permit indicate compliance with the applicable requirement.

This permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by BFI to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

#### **C. Test Methods and Procedures**

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, BFI may elect to voluntarily conduct compliance testing to confirm its compliance status.

#### **D. Recordkeeping Requirements**

The recordkeeping provisions shall be sufficient to meet the provisions of the monitoring requirements and shall include, as necessary, the installation, use and maintenance of the monitoring equipment or methods as well as the following information: the date the analyses were performed, the place and time of the sampling, the company or entity performing the sampling, the analytical techniques or methods used, the results of such analyses, and the operating conditions at the time of the analyses. Retention of the records of all required monitoring data and support information shall be for a period of at least five years from the date of measurement. Support information includes: all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the operating permit. BFI is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

#### **E. Reporting Requirements**

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, BFI is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limits and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

#### **F. Public Notice**

In accordance with ARM 17.8.132, a public notice was published in the *Missoulian* newspaper on or before March 23, 2004. The Department provided a 30-day public comment period on the draft operating permit from March 23, 2004, to April 22, 2004. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by April 22, 2004, are summarized, along with the Department's responses, in the following table. All comments received during the public comment period will be promptly forwarded to BFI so they may have an opportunity to respond to these comments as well.

##### **Summary of Public Comments**

<b>Person/Group Commenting</b>	<b>Comment</b>	<b>Department Response</b>
No Comments		

##### **Summary of Permittee Comments**

<b>Permit Reference</b>	<b>Permittee Comment</b>	<b>Department Response</b>
No Comments		

##### **Summary of EPA Comments**

<b>Permit Reference</b>	<b>EPA Comment</b>	<b>Department Response</b>
No Comments		



## SECTION IV. NON-APPLICABLE REQUIREMENTS ANALYSIS

Section IV of the operating permit "Non-applicable Requirements" contains the requirements that the Department determined were non-applicable. The following table summarizes the requirements that BFI identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

Applicable Requirements		Reason
State	Federal	
ARM17.8.201 Definitions ARM 17.8.202 Incorporation by Reference ARM 17.8.204 Ambient Air Monitoring ARM 17.8.205 Enforceability ARM 17.8.206 Methods and Data ARM 17.8.210 Ambient Standards for SO <sub>2</sub> ARM 17.8.211 Ambient Standards for NO <sub>x</sub> ARM 17.8.212 Ambient Standards for CO ARM 17.8.213 Ambient Standards for Ozone ARM 17.8.214 Ambient Standards for HS ARM 17.8.220 Ambient Standards for Settled Particulate ARM 17.8.221 Ambient Standards for Visibility ARM 17.8.222 Ambient Standards for Lead ARM 17.8.223 Ambient Standards for PM <sub>10</sub> ARM 17.8.230 Fluoride in Forage ARM 17.8.401 Definitions ARM 17.8.601 Definitions ARM 17.8.602 Incorporations by Reference ARM 17.8.801 through 17.8.808 ARM 17.8.825 - 17.8.826 ARM 17.8.1001 Definitions ARM 17.8.1002 Incorporations by Reference ARM 17.8.1004 When Air Quality Preconstruction Permit Required ARM 17.8.1103 Applicability - Visibility Requirements ARM 17.8.1101 Definitions		These rules consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.
ARM 17.8.403 Exemptions ARM 17.8.604 Prohibited Open Burning - When Permit Required ARM 17.8.605 Special Burning Periods ARM 17.8.606 Minor Open Burning Source Requirements ARM 17.8.611 Emergency Open Burning Permits ARM 17.8.612 Conditional Air Quality Open Burning Permits ARM 17.8.613 Christmas Tree Waste Open Burning Permits ARM 17.8.614 Commercial Film Production Open Burning Permits ARM 17.8.615 Firefighter Training ARM 17.8.828 Innovative Control Technology ARM 17.8.1005 Additional Conditions of Air Quality Preconstruction Permit ARM 17.8.1006 Review of Specified Sources for Air Quality Impact ARM 17.8.1007 Baseline for Determining Credit for Emissions and Air Quality Offsets ARM 17.8.1108 Notification of Permit Application ARM 17.8.1109 Adverse Impact and Federal Land Manager		These are procedural rules that have specific requirements that may become relevant to a major source during the permit span

	40 CFR 50 National Primary and Secondary Ambient Air Quality Standards 40 CFR 51 Requirements for Preparation, Adoption, and Submittal of Implementation Plans 40 CFR 64 Compliance Assurance Monitoring 40 CFR 65 Delayed Compliance Orders 40 CFR 67 Federal Approval of State Noncompliance Penalty Program 40 CFR 71 Federal Operating Permits Program 40 CFR 81 Non-Attainment Designations	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
	40 CFR 52 Approval and Promulgation of Implementation Plans 40 CFR 62 National Emission Standards for Hazardous Air Pollutants for Source Categories	These rules contain requirements for regulatory authorities and not major sources; these rules can be used to impose specific requirements on a major source.
	40 CFR 66 Assessment and Collection of Noncompliance Penalties 40 CFR 70 State Operating Permit Programs	These rules do not have specific requirements and may or may not be relevant to a major source and should never be listed in the applicable requirements or non-applicable requirements.

## **SECTION V. FUTURE PERMIT CONSIDERATIONS**

### **A. MACT Standards**

As of the issuance date of draft Operating Permit OP2831-01, no MACT Standards have been promulgated that will affect this facility.

### **B. NESHAP Standards**

As of the issuance date of draft Operating Permit OP2831-01, the Department is unaware of any future NESHAP Standards that may be promulgated that will affect this facility. The facility is currently subject to 40 CFR 61, Subpart M.

### **C. NSPS Standards**

As of the issuance date of draft Operating Permit OP2831-01, the Department is unaware of any future NSPS Standards that may be promulgated that will affect this facility. The facility is currently subject to 40 CFR 60, Subpart WWW.

### **D. Risk Management Plan**

As of the issuance date of draft Operating Permit OP2831-01, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan.

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68 requirements no later than June 21, 1999; three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.